

**REMARKS**

**A. Regarding the Amendments**

Claims 2, 16 and 42 have been amended as set forth in the attached "Version With Markings To Show Changes Made." As amended, the claims are supported by the specification and the original claims. Thus, upon entry of the amendments, claims 2-5, 16-19, 40 and 42-45 will remain pending.

**B. Double Patenting Rejections**

Applicants acknowledge the maintenance of the rejection of claims 2-5, 16-19 and 40 as allegedly unpatentable under the judicially created doctrine of obviousness-type double patenting, in light of claims 1-7, 21-22 and 53 of U.S. Patent No. 6,140,466. Applicants respectfully maintain that the subject matter of the present claims is not double patenting, as the claims of the '466 patent recite a variant with at least three zinc finger modules, where all three modules contain modifications. The claims of the present invention, however, recite a variant with at least two zinc finger modules, where at least one module has a modification. Therefore, the claimed invention is directed to subject matter, not covered by the claims of the '466 patent. However, in the interest of advancing prosecution, Applicants submit herein a terminal disclaimer over commonly owned U.S. Patent No. 6,140,466, to which priority is claimed in the present application under 35 U.S.C. §120. Accordingly, Applicants respectfully request withdrawal of the rejection in view of the terminal disclaimer.

Applicants acknowledge the double patenting rejection of claims 2-5 as allegedly unpatentable under the judicially created doctrine of obviousness-type double patenting in light of claims 1, 22, 28-29, 31, 46 and 50 of U.S. Pat. No. 6,242,568. In particular, the Examiner states that it would be prima facie obvious to practice the method of claim 1 in the '568 patent to obtain variants such as those claimed in the present application. Applicants respectfully disagree with the Examiner's allegation of double patenting. The Examiner's attention is respectfully drawn to the wording of claim 2 of the claimed invention, which specifies that the variant has at

least two zinc finger modules and that the amino acid sequence of at least one module has a modification. Contrarily, the method of claim 1 of the '568 patent claims a method for isolating a variant where the variant has at least two zinc finger modules and each of two modules of the variant have at least one amino acid sequence modification. Therefore, in particular, the method of the claims of the '568 patent do not render obvious a variant where only a single module has an amino acid sequence modification. However, in the interest of advancing prosecution, Applicants submit herein a terminal disclaimer over commonly owned U.S. Pat. No. 6,242,568, to which priority is claimed in the present application under 35 U.S.C. §120. Accordingly, Applicants respectfully request withdrawal of the rejection in view of the terminal disclaimer.

Similarly, Applicants acknowledge the statutory double patenting rejection of claim 40 under 35 U.S.C. §101 with regard to claim 46 of U.S. Pat. No. 6,242,568. As set forth above, the '568 patent recites a variant that has at least two zinc finger modules and each of two modules of the variant have at least one amino acid sequence modification. The variant of claim 40, however, has at least two zinc finger modules, but only a single module has an amino acid sequence modification. Therefore, claims 40 of the claimed invention and claim 46 of the '568 patent do not claim the same invention, as alleged by the Examiner, but are directed to variants with different characteristics. Accordingly, Applicants respectfully request withdrawal of the rejection.

**C. Rejection Under 35 U.S.C. § 112**

Applicants respectfully traverse the rejection of claims 42-45 under 35 U.S.C. § 112, first paragraph, for containing subject matter allegedly not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the invention at the time of filing of the Application. In particular, it is alleged in Paper Nos. 10, 17 and the Office Action mailed March 11, 2003 that claims 42-45 are directed to a hybrid protein containing zinc finger modules from any zinc finger protein, where the variant can bind a sequence different from the sequence bound prior to modification.

Applicants respectfully submit that the subject matter of claims 42-45 is adequately described in the specification. In particular, it is set forth at page 10 in the definition of "variant" that the variant "may be a hybrid which contains zinc finger domain(s) from one protein linked to zinc finger domain(s) of a second protein, for example." It is therefore submitted, that one of skill in the art would have been able to take the teaching of a hybrid variant and combine it with the teachings of the application at, for example, page 43, lines 21-31, where the variant is found to bind to a cellular nucleotide sequence that is different from the cellular nucleotide sequence each of the fingers of the variant bound, prior to being linked as a hybrid. One of skill in the art would be able to take the particular teachings of the invention where the variant is a modified natural amino acid sequence with a new binding specificity and apply them to a situation where the variant is a hybrid. Therefore, claims 42-45 meet the written description requirement of 35 U.S.C. § 112, first paragraph. Withdrawal of the rejection is therefore respectfully requested.

Claims 2-5 and 16-19 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter allegedly not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the invention at the time of filing of the Application. In particular, it is alleged in the Office Action mailed March 11, 2003 that claims 2-5 and 16-19 are directed to a variant that binds to a sequence different from a sequence bound by any zinc finger binding protein in the art that differs in amino acid composition from the claimed variant. The Examiner's attention is respectfully drawn to amended claim 2, where it is clear that the variant is a modified zinc finger binding protein, which binds to a polynucleotide sequence different from a polynucleotide sequence bound by the zinc finger binding protein from which the variant is derived. Thus, it is clear that the variant's ability to bind a polynucleotide sequence is not compared to just any other zinc finger binding protein, but to the specific zinc finger binding protein the variant was generated from. Therefore, by comparison of the ability of the zinc finger binding protein to bind polynucleotide sequences prior to and after modification, a variant of the claimed invention is defined. Support for this clarification may be found in the specification, for example, at page 10, lines 16-24, page 43, lines 21-31, page 47, lines 3-5 and page 47, line 30 to page 48, line 3 and the examples described

therein. Claim 16 has been amended to remove the language regarding the polynucleotide sequence, as this language is already contained in claim 2, from which claim 16 depends. Therefore independent claim 2 and claims 3-5 and 16-19, which depend from claim 2, meet the written description requirement of 35 U.S.C. §112, first paragraph. Accordingly, removal of the rejection is requested.

Similarly, claims 42-55 are also rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter allegedly not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the invention at the time of filing of the Application. In particular, it is alleged as a new rejection in the Office Action mailed March 11, 2003 that the language in claims 42-45 reciting a variant that binds to a sequence different from a sequence bound by the individual modules of the first protein and the second protein is not supported by the specification. Applicants respectfully disagree. The Examiner's attention is respectfully drawn again to the specification at, for example page 10, lines 16-24, page 43, lines 21-31, and page 43, lines 3-5, where binding of a variant is described as not being the same as the protein(s) from which the variant was derived. Accordingly, one of skill in the art would have been able to apply the teachings regarding the binding specificity of a variant with amino acid modifications to a hybrid variant.

Applicants respectfully traverse the rejection of claims 2-5 and 42-45 under 35 U.S.C. §112, second paragraph as allegedly indefinite for failing to point out and distinctly claim the subject matter of the invention.

In particular, claim 2 is set forth as vague and indefinite for use of the term "zinc finger molecule." Initially, the Examiner's attention is respectfully drawn to the amended claim 2, wherein the typographical error of "molecule" has been amended to "module." With regard to the Examiner's assertion that the term "zinc finger module" is lacking a definite article, Applicants respectfully disagree. The Examiner's attention is redirected to the language of the claim, which states that "each zinc finger module that binds a polynucleotide sequence different from a sequence bound by the zinc finger nucleotide binding polypeptide from which the variant

is derived..." (emphasis added). The modules that are referenced by this language are the modules that bind to a new polynucleotide sequence. It is therefore respectfully submitted that this language is definite, as drafted, and withdrawal of the rejection is respectfully requested.

Similarly, claim 42 is rejected as allegedly unclear, as the term "zinc finger" in line 3 has no antecedent basis. The Examiner's attention is respectfully drawn to the amended language of claim 42, where "zinc finger" has been amended to "zinc finger protein." This amendment makes it clear that the term in line 3 refers to the hybrid zinc finger protein of the preamble, the subject of the claim.

Therefore, claims 2-5 and 42-45 meet the definiteness requirement of 35 U.S.C. §112, second paragraph. Accordingly, withdrawal of the rejection is requested.

**D. Rejection Under 35 U.S.C. § 102**

Applicants respectfully traverse the rejection of claims 2-5 and 16-19 under 35 U.S.C. 102(b) as allegedly anticipated by Hanas et al.

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration (*In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990), *In re Bond*, 15 USPQ 2d 1566 (Fed. Cir., 1990)). It is the Examiner's assertion that Hanas anticipates the claimed invention as that reference discloses a variant that binds to a polynucleotide sequence and would not be expected to bind to the same polynucleotide sequence as that of an unrelated zinc finger protein. Applicants respectfully direct the Examiner's attention to the amended language of claim 2 and claims 3-5 and 16-19 dependent therefrom. Independent claim 2 has been amended to clarify that the variant is a modified zinc finger binding protein, which binds to a polynucleotide sequence different from a polynucleotide sequence bound by the zinc finger binding protein from which the variant was generated. Accordingly, it is respectfully submitted that Hanas does not teach a variant with the ability to bind a polynucleotide sequence different from a polynucleotide sequence bound by the parent protein.

As Hanas does not teach all elements of the claimed invention, it is respectfully submitted that Hanas does not anticipate the invention. Withdrawal of the rejection is therefore respectfully requested.

### **CONCLUSION**

In summary, for the reasons set forth herein, Applicants maintain that claims 2-5, 16-19, 40 and 42-45 clearly and patentably define the invention, respectfully request that the Examiner reconsider the various grounds set forth in the Office Action, and respectfully request the allowance of the claims which are now pending.

If the Examiner would like to discuss any of the issues raised in the Office Action, Applicant's representative can be reached at (858) 677-1456. Please charge any additional fees, or make any credits, to Deposit Account No. 50-1355.

Respectfully submitted,

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